

IN THE CLAIMS:

The following listing replaces all prior versions of the claims.

1-7. (Canceled)

8. (Withdrawn) A receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence.

9. (Withdrawn) The protein according to claim 8 comprising the sequence of amino acids shown in Seq. ID No: 2.

10. (Withdrawn) The protein according to claim 8 comprising a sequence of amino acids wherein one or more of amino acids are deleted, substituted or added in the sequence of amino acids shown in Seq. ID No: 2.

11. (Withdrawn) The protein according to claim 8 comprising the sequence of amino acids shown in Seq. ID No: 4.

12. (Withdrawn) The protein according to claim 8 comprising a sequence of amino acids wherein one or more of amino acids are deleted, substituted or added in the sequence of amino acids shown in Seq. ID No: 4.

13. (Withdrawn) A fusion protein comprising the protein according to claim 8 fused with a marker protein and/or a peptide tag.

14. (Withdrawn) An antibody specifically bound to the protein according to claim 8.

15. (Withdrawn) The antibody according to claim 14 which is a monoclonal antibody.

16. (Withdrawn) A host cell comprising an expression system expressing the protein according to claim 8.

17. (Currently amended) A ~~non-human animal~~ transgenic mouse comprising in its genome a gene encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence, wherein said receptor protein is excessively expressed, compared to expression in a wild-type mouse.

18. (Currently amended) A ~~non-human animal~~ knockout mouse lacking a functional gene ~~wherein a gene function~~ encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence ~~is destroyed on a chromosome.~~

19. (Currently amended) The ~~non-human animal~~ knockout mouse according to claim 18,

whose macrophages have having no reactivity against bacterial DNA having an unmethylated CpG sequence.

20. (Canceled)

21. (Withdrawn) A method of preparing a cell expressing a protein having reactivity against bacterial DNA having an unmethylated CpG sequence characterized in that the DNA according to claim 1 is introduced into a cell wherein a gene function encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is destroyed on a chromosome.

22. (Withdrawn) A cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the method of preparing a cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence according to claim 21.

23. (Withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: in vitro culturing a cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence in the presence of a target substance, and measuring/evaluating TLR9 activity.

24. (Withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: administrating a target substance to a non-human animal wherein a gene function encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is destroyed on a chromosome, and measuring/evaluating TLR9 activity of macrophages or spleen cells obtained from the non-human animal.

25. (Withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: administrating a target substance to a non-human animal wherein a gene encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is excessively expressed, and measuring/evaluating TLR9 activity of macrophages or spleen cells obtained from the non-human animal.

26. (Withdrawn) A screening method for an agonist or an antagonist of a protein having reactivity against bacterial DNA having the unmethylated CpG sequence according to claim 24 using a mouse as a non-human animal.
27. (Withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 23.
28. (Withdrawn) A pharmaceutical composition comprising whole or part of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence as an active component.
29. (Withdrawn) A pharmaceutical composition comprising the agonist or antagonist according to claim 27 as an active component.
30. (Withdrawn) A kit used to diagnose a disease in a test DNA sample, which disease is related to the deletion, substitution and/or addition in a sequence of DNA encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence, which kit comprises the DNA according to claim 3.
31. (Canceled)
32. (Withdrawn) A screening method for an agonist or an antagonist of a protein having reactivity against bacterial DNA having the unmethylated CpG sequence according to claim 25 using a mouse as a non-human animal.
33. (Withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 24.
34. (Withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 25.
35. (New) A transgenic mouse wherein the genome of the mouse comprises a homozygous

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Appln. No. 10/088,567

inactivation of the Toll-like Receptor 9 (TLR9) allele such that no functional N-terminal fragment of TLR 9 is produced, and wherein macrophages of said mouse exhibit decreased responsiveness to CpG ODN.

36. (New) A knockout mouse lacking receptor proteins specifically recognizing bacterial DNA having an unmethylated CpG sequence.

37. (New) The transgenic mouse of claim 17 wherein the gene encodes TLR9.